January 1920

Test 010: Oil Pull 12-20

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

UNIVERSITY OF NEBRASKA

AGRICULTURAL ENGINEERING DEPARTMENT

UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 10

Dates of test May1, to May 21, 1920

Name, model and rating of tractor Oil Pull 12-20 Model "K"

Serial No. Engine 13817 Serial No. Chassis

Manufacturer Advance-Rumely Co., La Porte, Ind.

Tractor equipment used Bosch DU 2 Magneto; Own Carburetor.

Style and dimensions of wheel lugs Angle 2-1/2" high, 13-1/2" long.

Brake Horse Power Tests

Horse Power Developed	Crank Shaft Speed R. P. M.	Length of Test Min.	Fuel Consumption: Kind of Fuel	Fuel Consumption: Amount Used per Hour Gallons	Fuel Consumption: Horse Power Hours per Gallon	Water Consumption Gallons per Hour: In Radiator	Water Consumption Gallons per Hour: In Fuel Mixture	Water Consumption Gallons per Hour: Total	Temperature *Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Humidity %	Barometric Pressure Inches Mercury
RATED LOAD TEST												
20.06	564	120	Kero	1.855	10.82	none	4.61	4.61	200	58	46	29.0
	Belt Slippage			1.7%								
VARYING LOAD TEST												
20.18	566.5	10	Kero									
21.00	560.5	10	"									
1.31	587.0	10	"									
5.22	584.5	10	"									
10.27	575.0	10	"									
15.19	566.5	10	"									
12.33	574.0	60	"	1.300	9.48	none	1.00	1.00	200	63	72	29.9
MAXIMUM LOAD TEST*												
25.87	566	60	Kero	1.248	7.96	none	3.60	3.60	184	69	66	28.9
	Belt Slippage			1.8%								
HALF LOAD TEST												
10.29	576	60	Kero	1.207	8.53	none	.89	.89	192	63	77	29.0
	Belt Slippage			1.4%								

*Taken in discharge line from engine.

Remarks The Kerosene used in this test weighed 6.50 lbs per gallon.

*During the maximum test it was necessary to frequently adjust the water feed to fuel mixture.

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Drawbar Horse Power Tests

Horse Power Developed	Draw Bar Pull Pounds	Speed Miles per Hour	Crank Shaft Speed R. P. M.	** Slippage of Drive Wheels %	Fuel Consumption: Ind of Fuel Used	Fuel Consumption: Amount Used per Hour Gallons	Fuel Consumption: Horse Power Hours per Gallon	Water Used per Hour Gallons	*Temperature of Cooling-Fluid Deg. F	Temperature of Atmosphere Deg. F.	Average Humidity %	Barometric Pressure Inches Mercury
RATED LOAD TEST. TEN HOURS												
13.46	2399	2.10	588	12.08	Kero	2.487	5.41	2.73	169	74	65	28.4
MAXIMUM LOAD TEST (133.7 ft run)												
15.02	2780	2.02	575	8.42	Kero	----Not recorded ------			190	79	54	28.6

*Taken in discharge line from engine.

Remarks ** For computing slippage, the circumference of the drive wheels was taken at points of lugs.

— Drawbar tests were made with the tractor in low gear.

Oil Consumption:

During the complete test consisting of about 44 hours running the following oil was used:

For the engine, 5 gallons of Veedol Ex. Heavy; and 3-1/4 gal of Mobiloil B.

For the transmission, gallons of none added except 3/4 gal of used crank case oil.

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Miscellaneous Tests: None.

Repairs and Adjustments. Endurance:

May 5. Adjusted one push rod. Adjusted breaker points on magneto.

May 15. Put in one new spark plug in left cylinder.

May 22. At the end of the test, the gasoline line between the hand pump and the carburetor leaked. With the above mentioned exception the tractor was apparently in good condition and there was no indication of undue wear in any part nor of any weakness which might require early repairs.

Repairs and adjustments as reported above do not, in our opinion indicate any important mechanical defect in the tractor.

Brief Specifications Oil Pull 12-20 Model "K" Tractor.

Engine: Twin cylinder opposed cranks, horizontal, valve-in-head. Bore 6" stroke 8", rated speed 560 r.p.m.

Chassis: Four wheel. Rated speeds: low gear 2.1 mi. per hr. high gear 3.26 mi. per hr.

Total Weight 6638 lbs..

General Remarks:

In the advertising literature submitted with the application for test of this tractor we find some statements and claims which cannot be directly compared with the results of the test as reported above. It is our opinion that none of these statements or claims are unreasonable or excessive except the following statements quoted from their general catalog:

Page 6. "And the proper weight, plus proper distribution of weight gives 100 per cent traction even under adverse conditions."

Page 8. "---- the two cylinder, low speed engines are much better suited to tractor use than any other types now in use-- that the former show an advantage of approximately 20% greater drawbar efficiency."

Page 9. "Its record of .7 lbs kerosene per brake horse power has not been equalled in public demonstrations by any other kerosene burning tractor, before or since."

"Take any official tests or demonstrations held since 1912--- figure the average on any and all tests and you will find that the Oil Pull not only hold the record for the best average and uniformity, on maximum power developed and low fuel consumption--- but that no tractor has yet demonstrated by consecutive tests its ability to rank second to the Oil Pull".

Page 13. "-- our own and public tests have proved it to be, without exception, the most efficient and economical system of oil combustion."

Page 14. "--All air going into the engine must first pass thru a patented air cleaner which removes all dirt and grit."

We, the undersigned, certify the above is a true and correct report of Official Tractor Test No. 10

Claude K. Shedd
Engineer-in-Charge

Oscar W. Gogren

C. E. Brackett

P. M. Smith

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